Chapter 34

The Biosphere: An Introduction to Earth’s Diverse Environments

Chapter Objectives

Opening Essay

Compare the unusual ecology of the Himalayas and deep-sea hydrothermal vent   
communities.

The Biosphere

34.1 Define and distinguish between the different levels within ecosystems.   
Distinguish between the biotic and abiotic components of an ecosystem.

34.2 Summarize the subject and impact of Rachel Carson’s influential book Silent Spring.

34.3 Describe the abiotic factors that influence life in the biosphere.

34.4 Describe the adaptations that enable pronghorns to survive in the open plains and shrub deserts of North America.

34.5 Explain how global climate patterns are influenced by solar energy input as well as the movement of Earth through space. Explain how landforms affect   
local climate.

34.5 Explain why the seasons of the year, prevailing winds, and ocean currents exist.

Aquatic Biomes

34.6 Describe the abiotic and biotic characteristics of the different ocean zones and adjacent aquatic biomes.

34.7 Describe the different types of freshwater biomes.

34.7 Explain how the properties of a river change between its source and its outlet, and how this impacts the biotic components of this biome.

Terrestrial Biomes

34.8 Explain why species in widely separated biomes may have similar features.

34.8 Explain why storms and fire are crucial factors in some biomes.

34.8–34.17 Describe the characteristics used to define terrestrial biomes. Then use these characteristics to define the major terrestrial biomes: tropical forests, savannas, deserts, chaparral, temperate grasslands, temperate forests, coniferous forests, tundra, and polar ice.

34.18 Explain how all parts of the biosphere are linked by the global water cycle.